

# **ENHANCING ADULT STUDENT LEARNING THROUGH COURSE LEARNING OUTCOME EMPHASIS AND ASSESSMENT**

by

Ronald Earl Clark, Ed.D.  
Donna Roberts, MS  
Anne Smith, Ed.D.

Embry-Riddle Aeronautical University

## **ABSTRACT**

The researchers were concerned that course learning outcomes were not always central to the construction of the course syllabi and lesson plans, and that, subsequently, they were not being taught/learned. A secondary concern was that a course learning outcomes assessment was not in place. They hypothesized that faculty concentrating on course design around learning outcomes and teaching to the learning outcomes of each course would cause a significant increase in student attainment of learning outcome knowledge. A learning outcome assessment survey was distributed to 17 randomly selected undergraduate and graduate courses in two regions of the Extended Campus of Embry-Riddle. Thirteen courses were specifically designed and taught to the learning outcomes, and four were not. The results indicated that there was a significant increase in student learning outcome knowledge attainment when courses were designed around the learning outcomes and the learning outcomes were stressed in all class activities.

## **Introduction**

The researchers jointly expressed concern that Embry-Riddle Aeronautical University's (ERAU) Extended Campus (EC) does not have a direct assessment of learning outcomes in all Extended Campus courses. Because of this, the

researchers felt that Extended Campus courses might not contain the most appropriate learning outcomes for each course. They were also concerned that courses across the Extended Campus were not being taught “to the learning outcomes”, because faculty might be teaching courses with an individual faculty interpretation of academic freedom that precluded this.

The researchers also felt that most ERAU EC faculty do not use class lesson plans that focus on specific learning outcomes to be covered in each class. Last, the researchers were concerned that when adoption of blended learning delivery occurred on the Extended Campus, the web-based component might not be true to the course learning outcomes.

To scientifically assess these learning outcomes assessment concerns, the researchers decided to participate in the 2005 ERAU Extended Campus Teaching and Learning Effectiveness Symposium by conducting an original research study, and submitting their research paper as an outcomes assessment proposal. They planned to conduct a research study that assesses the attainment, as a percentage, of each course learning outcome. What follows is a report of the research study conducted in 2005.

## Review of Related Literature

### *Outcomes Assessment*

The researchers began their review of related literature with the assumption that the end of course student and faculty “satisfaction” surveys currently used throughout the Extended Campus did not specifically assess whether or not each and all course learning outcomes were relevant and to what extent each was taught

(learned). This view was bolstered as the outcomes assessment literature review outlined a comprehensive process of assessment that was clearly not in place on the ERAU Extended Campus.

According to the American Association of Higher Education, assessment is an ongoing process geared to understanding and improving student learning (AAHE, 1995). Assessment involves making our expectations public and explicit, and setting appropriate criteria and high standards for learning quality. Assessment is a process of systematically gathering, analyzing, and interpreting evidence to determine how well performance matches expectations. From this definition, the researchers felt that, while the EC had a systematic assessment process in place, it was not specific and comprehensive enough to accurately assess outcomes-based learning.

The American Psychological Association (APA) (2005) has published a list of the best practices in outcomes assessment, which includes the following top 10 task force recommendations:

- Encourage department ownership to drive the process
- Define your objectives in the context of your institutional mission
- Focus on collaboration and teamwork
- Clarify the purpose of assessment
- Identify clear, measurable, and developmental student learning
- Use multiple measures and sources consistent with resources
- Implement continuous assessment with clear, manageable timelines
- Help students succeed on assessment tasks
- Interpret and use assessment results appropriately

- Evaluate your assessment practices

The researchers appreciate that all of the “top 10” assessment points mentioned above are applicable to measuring academic quality through the student assessment of learning outcomes. They consider the student and faculty end of course satisfaction surveys a small part of an overall assessment plan that includes the direct assessment of course learning outcome success. The LO assessment can be both formative and summative, and assist in the daily and end of course assessment of teaching success as a function of academic quality.

Another APA schema mentioned as a part of a viable assessment plan design is the attitude measurement (APA, n.d.). The APA cautions, however, that valid attitude measurements are dependent on quality of design and implementation. They indicate that the students must be motivated, careful, and candid to generate meaningful data. Administrators are warned to be careful to minimize sources of error such as good design of the instrument. The researchers are forewarned concerning the validity of their attitude survey used in this research study.

Wiley (2003) indicates that the most important function of assessment is to use it as a major means for continuous improvement in our teaching and in the courses and programs we offer on our campuses. He states that none of the various assessment activities we use are particularly useful if they do not help faculty to become more effective in the classroom. The researchers would add that the ERAU EC student and faculty end of course satisfaction surveys do not particularly provide for the continuous improvement in our teaching mentioned by Wiley.

Hatfield (2004) recommends that we use a comprehensive assessment of student learning attained from course learning outcomes by using the words at each level of Bloom's Taxonomy of cognitive learning. Each course learning outcome is listed, along with the practice that should be expected if the learning outcome has been achieved. She then uses a "does not meet", "meets", and/or "exceeds expectations" assessment schema for each learning outcome. She does not indicate an assessment of the appropriateness, including modification and substitution, of the learning outcomes.

Angelo and Cross (2005) mention that if assessment is to improve the quality of student learning, both faculty and students must be personally invested and involved in the process. This was an important point for the researchers, as they were involving students as their primary means of data collection. At Embry-Riddle, all Extended Campus syllabi contain each learning outcome for each course, with no variation in wording allowed. The researchers consider the technique of assessing the teaching and learning of student learning outcomes by student surveys to be a valid part of course and program assessment.

Paine-Clemes (2005), a college professor in the California State University system advises that we should not be afraid to ask the students about assessment outcomes. She trusts in the capability and validity of student outcomes assessment, and frequently invokes student course and program assessment.

At California State University, Hayward, Bensky (2005) uses an on line quiz to formatively assess whether or not his students have grasped a learning outcome. His method of posting the gradable short quiz on line allows him to instantly assess

what percentage of the class chose which answer (Bensky). He then discusses the correct and incorrect answers with very interested students. The researchers see that this quick quiz method would be very effective at any level, in any course, but especially with the course learning outcomes.

Palomba and Banta (2005), indicate that there is a need to align curricula with learning objectives. The researchers agree, and have designed this research study to assess student learning outcomes in as direct a fashion as possible. One conclusion from Palomba and Banta was that outcomes assessment helps faculty tailor the curriculum, monitor learning, and directly encourage the development of their students.

Jenkins and Unwin (2005) teach faculty how to write learning outcomes. In their core curriculum primer on learning outcomes, they state that learning outcomes help students learn more effectively because they know where they stand. They also indicate that by stressing a particular LO in a class lesson plan, students are provided an excellent framework upon which to hang their learning. The researchers agree, and have structured their data collection device so that the learning of each course learning outcome will be assessed.

It was hypothesized that there would be a statistically significant difference between the learning outcome percentage of learning achieved as a function of forewarning. The forewarned courses/students will learn all learning outcomes significantly better than the unforewarned courses/students.

#### Research Methodology

For this quantitative descriptive research study, the researchers developed an outcomes assessment instrument designed to assess the appropriateness of each course learning outcome, attainment of each learning outcome as a percentage, and student/faculty recommendations for change (see attachment 1). They then randomly selected 17 ERAU Extended Campus undergraduate and graduate courses in the US and Europe as the focus of this study.

Four of the courses selected, acting as a small control group, were “blind” to the intent of this research study, and no warning or indication was given to these faculty members or students. The other 13 courses selected involved a one page briefing sheet given to the faculty member, instructing them to teach to the course learning outcomes in all facets of their instruction (see attachment 2).

Following completion of these courses, all students and faculty were administered the *Learning Outcomes Assessment Survey*, and the data were assessed using Excel© spreadsheets, descriptive statistics, and T tests.

### Results

In the 17 courses studied, there were 160 undergraduate (119) and graduate (41) students. With an average of 10 learning outcomes per course, there were 1,578 undergraduate (1,202) and graduate (376) learning outcome percentages recorded by the 160 students. In all, 1,073 learning outcomes were forewarned, and 505 were not warned. The forewarned learning outcome “learned” percentage was 84.64, while the unwarned learning outcome “learned” percentage was appreciably lower, at 73.42. There was a statistically significant difference greater than  $p < .001$

between all LOs of the forewarned and no warning courses. The null hypothesis was rejected.

Table 1 depicts the warning/no warning number of learning outcomes, and the percentage the respondents felt that each LO was learned.

Table 1

*Warning/No Warning LOs Were Learned*

<u>G/UG</u>	<u>ΣLO%</u>	<u>ΣN</u>	<u>Avg LO%</u>
Total Warning	90734	1073	84.64
Total Non-warning	30823	505	61.04
Total Graduate	33304	376	88.45
Total Undergraduate	88253	1202	73.42

There was no apparent gender difference across the warning (W) / no warning (NW) treatment, with approximately 93 percent male and seven percent female respondents. No apparent computer literacy effect was seen. There was a significant difference in visual learning style, with 33.5 percent NW to 40.0 percent W. There was a significant difference in “hands on” learners, with 43.5 percent NW to 38.3 percent W. There was a significant difference in peer group social learning style, with 22.3 percent NW to 26.3 percent W. When asked if the course was LO centered, there was a significant difference between NW and W groups, with 78.0 percent NW to 90.3 percent W. The researchers consider this the most important finding of this research study.

When asked if the LOs covered the course adequately, there was a significant difference between the two groups, with 80.5 percent NW to 91.1 percent



W. Clearly, the “warned” students felt that the LOs more adequately covered the course. When asked if the course description was adequately contained in the course LOs, there was a significant difference between the two groups, with 76.1 percent NW to 90.4 percent W. When asked if they were satisfied with the course, there was a statistically significant difference between the two groups, with 62.7 percent NW to 88.4 percent W. Last, when asked if they were satisfied with their ERAU program, there was a statistically significant difference between the two groups, with 84.6 percent NW to 92.4 percent W.

With an adequately sized sample (n = 160 respondents, or 1,578 LOs) assessed, it is unlikely that sufficient bias existed in the not warned (NW) sample, which was chosen randomly. The researchers can only conclude that when faculty are specifically asked beforehand to teach a course to the learning outcomes, their students report that they learn significantly more of the learning outcome information than if they were not forewarned. Apparently, the faculty are more highly motivated to teach the course LOs, they are more central to the LOs in what they teach, and their enthusiasm for the LOs carries over to their students.

### Conclusions and Recommendations

The researchers concluded that asking faculty to teach to the learning outcomes in a course is a powerful tool in boosting student LO percentage learned, satisfaction with the course, and satisfaction with their ERAU program. It was concluded that the sample size was more than adequate for this research model, and the possibility of a totally biased NW sample was too remote to receive serious consideration.

Other researchers are encouraged to replicate this research study. **It is recommended to the Extended campus that faculty be asked to teach to the course learning outcomes during their initial orientation with ERAU, at all faculty meetings and faculty development workshops, during the syllabus construction phase, and as they are readying for each class during the term.** In short, teaching to the learning outcomes should be reiterated at every opportunity.

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**APPENDIX A**  
**FACULTY LETTER**



**Dear Embry-Riddle Faculty Member:**

As you instruct this course, please concentrate on teaching it to the standard of the **Course Learning Outcomes** contained in both the course outline and your syllabus. This is the only instruction you will receive. On the last day of class, both you and your students will be administered a survey to collect data.

Thank you in advance for participating in this valuable research study.

Dr. Ronald Clark  
Dr. Anne Smith  
Ms. Donna Roberts

## APPENDIX B

### LEARNING OUTCOMES ASSESSMENT SURVEY

**For items 1 through 10 below, please fill in the blank or circle your choice.**

1. Date: \_\_\_\_\_

2. Center: \_\_\_\_\_

3. Course Number: \_\_\_\_\_

4. Student Faculty Member

5. Age: \_\_\_\_\_

6. Gender: \_\_\_\_\_

7. My Computer Literacy is (from 0% to 100%): \_\_\_\_\_

8. **Sensory** Personal Learning Style (should add up to 100%). (This is **how** I learn)

visual learner	_____
auditory learner	_____
hands-on learner	_____
other? (_____)	_____

9. **Environment** Personal Learning Style (should add up to 100%) (**where** I learn)

in-class learner	_____
WWW/Internet learner	_____
personal study learner	_____
Other (_____)	_____

10. **Social/Interpersonal** Learning Style (should add up to 100%) (**from whom** I learn)

in-class expert	_____
peer collaborative/group learning)	_____
personal study (independent learner).	_____
Other (_____)	_____

**For items 11-19 below, please indicate as a percentage from 0 (low) to 100 (high) your personal knowledge and attainment of each ASCI 603 Learning Outcome.**

11. **Recognize** the different types of aerospace and aviation organizations and their interrelationships with each other. \_\_\_\_\_
12. **Assess** the facilities comprising the current aerospace industrial base, and describe state-of-the-art materials and practices used in the manufacture and maintenance of various types of vehicles. \_\_\_\_\_
13. **Analyze** the trends toward future manned and unmanned aircraft. \_\_\_\_\_
14. **Evaluate** the basic principles of aerodynamics relating to current aircraft and the technology governing future developments. \_\_\_\_\_
15. **Recognize and evaluate** the basic elements of orbital mechanics as applied to launch, flight, and recovery of manned and unmanned space vehicles. \_\_\_\_\_
16. **Describe** the basic elements of the Space Transportation System and the International Space Station, and assess their contributions to the progress of space flight. \_\_\_\_\_
17. **Solve** typical problems involving the parameters of altitude, period, and inclination of orbiting vehicles, especially as pertains to the commercial use of space. \_\_\_\_\_
18. **Assess** the proposed space goals for the 21st century. \_\_\_\_\_
19. **Select and analyze** a topic of current relevance to aviation or space vehicles. Report the results of the analysis in a paper, using the appropriate computer software (Word, Excel, etc.), and by an oral briefing to the class. \_\_\_\_\_

**For items 20-22 below, please indicate as a percentage from 0 (low) to 100 (high), your percentage of attainment of each item.**

20. All course activities were centered around the course Learning Outcomes listed above. \_\_\_\_\_
21. The Learning Outcomes listed above completely cover this course, according to the **ASCI 603** Course Description listed below. \_\_\_\_\_

**ASCI 603 Course Description:** This course is an overview of aircraft and spacecraft development. Included are vehicle mission, the requirements directed by economics, military and defense considerations, and research and developmental

processes needed to meet vehicle requirements. Aviation and aerospace manufacturing organizations and techniques are addressed, to include planning, scheduling, production, procurement, supply, and distribution systems. Aviation and aerospace maintenance systems from the built-in test equipment to the latest product support activities are explored..

**22.** The **ASCI 603** Course Description is still \_\_\_\_\_ percent applicable to the aviation/ aerospace industry today.

**23.** The **ASCI 603** Course Description should be updated to include the following:

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**24.** The following additional or modified Learning Outcomes should be added to this course:

LO1A:

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LO2A:

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LO3A:

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LO4A:

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LO5A:

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**For items 25-26 below, please indicate as a percentage from 0 (low) to 100 (high) your percentage of satisfaction with each item.**

**25. I am personally satisfied with the learning I accomplished in this course.**

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**26. I am personally satisfied with my current Embry-Riddle education program.**

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**27. If I could change anything** about my current overall ERAU educational program experience, I would:

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**28. Here are some additional thoughts** regarding the learning outcomes in this course:

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## **APPENDIX C**

### **SURVEY RESPONSES**

COURSE: SFTY 335  
CENTER: Luke  
WARNING: No  
DATE: July 28, 2005

#### **Update course description to include:**

1. Newer materials being used or in the research stages
2. New metals & alloys; theoretical metals; nano technology
3. Less writing and time consuming items, more tests
4. More analyzing of structural failures.  
Instructor used pictures & personal experiences that helped in course. Would like to see those things in text or somehow incorporated into course.
5. Math (calculations)
6. A more modern textbook which uses better pictures and demonstrations that will mimic exactly what we would see in the field.

#### **Added Learning Outcomes:**

1. calculate problems

#### **Change about ERAU experience:**

1. Add a PhD program (faculty)
2. Quit raising tuition!!!
3. Pass Eng. 221
4. Shorten the amount of ten page reports, almost every class I take seems to have a ten page report. I'm sick of them.
5. Have the front office be more involved with what credits I need or have
6. Hold class in an actual classroom rather than a conference room
7. I would like to see the courses at Luke Center be made in to two days a week courses for 2.5 hrs. I think having to be in class for nearly 5 hours is too much for an individual who works a full day.
8. Better access to my current progress towards my degree (i.e. updated transcripts, courses required)  
I understand the concept behind group projects, but I think the fact that almost everybody in these courses has a job it is unnecessary. Everyone already works in groups and has the experience. The fact that we all have jobs also makes it more difficult to do group projects.
9. Ensure I can dedicate more time to study and research the topics and areas of instruction pertaining to each class.
10. Work less & study more. I am very happy with ERAU. My current job has very long hours & that affects my study habits.

## **Additional thoughts:**

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COURSE: MATH 211  
CENTER: Luke  
WARNING: No  
DATE: August 1, 2005

### **Update course description to include:**

1. Something to do with Aviation Application. There was none.
2. Following the current text book being utilized.
3. This is supposed to be statistics with aviation applications. Where is the aviation application?
4. No research paper.
5. Lab (hand on).
6. To learn how to use statistics.
7. I don't know how to answer this question based on what I learned.
8. Use more examples from the aviation industry.

### **Added Learning Outcomes:**

1. Aviation application.
2. Follow the book.  
Don't skip around.  
Don't change the method of teaching during the middle of class.

### **Change about ERAU experience:**

1. Check first to see how the programs & math reqts for students have changed since I last taught & see how much Excel pre students had (little/no). (faculty)
2. Retake this class with another instructor who can teach using the book, offer feedback/help when needed and answer student requests for info/help in a timely manner.
3. Get a better instructor for MATH 211.
4. Take fewer surveys.
5. Better prepared teachers.
6. Outline what coarse are coming up.
7. I feel lost in this class. I have always been an exceptional student with a current GPA of 3.833. This class has caused me the most turmoil and I walk away from it confused. Sure we learned a few things but I still don't understand how to put it together. This has been my worst class hands down.
8. Take more classes.
9. I enrolled in your program because it came highly recommended from my peers. I am not satisfied with my instructors so far.
10. Have the option for day time class.
11. Give more credit for experience in civilian education and military education.

### **Additional thoughts:**

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COURSE: MGMT 311  
CENTER: Sky Harbor  
WARNING: No  
DATE: July 27, 2005

### **Update course description to include:**

1. The Internet's increasing impact and role in marketing. (faculty)
2. Communication skills used by future marketers . . .
3. A teacher that teaches the class.
4. Current trends in the airline/aerospace manufacturing areas.
5. Good text. Could use multimedia materials to reinforce and fill in "dry spots".

### **Added Learning Outcomes:**

1. Area manufacturer & their marketing.
2. Marketing team project instead of paper.

### **Change about ERAU experience:**

1. Appreciate consistent (and easy) access to A/V equip. Sometimes difficult to locate equipment. (faculty)
2. Have more classes available to me.
3. I really enjoy my educational experience from Embry-Riddle.
4. Have more one on one time with other students . . . studying in a library environment.
5. Nothing all other class are very well taught and I have learned alot.
6. Nothing. I have enjoyed every moment here. Its been great. Additional courses would be nice, so focus could be made in other speicalties.
7. Poor facilities, noise, desk space>improve. Increase multimedia use.
8. Have classes during the morning to noon hours.

### **Additional thoughts:**

1. Teaching 311 for the 1<sup>st</sup> time, I don't feel like I can objectively (or even subjectively) comment on the course content outcomes, or objectives, yet. Know once the term is over and I can step back to see the whole picture, so to speak, I will be able to. Personally, this term was very difficult for me due to extenuating circumstances . . . This session was an anomaly; I am capable of much better . . . (faculty)
2. Find another instructor to teach the class. He was a likeable person but he was unreliable and didn't take teaching seriously. Also there was no presentation requirements for this class and while that makes my work load easier, it think presenting is an important marketing skill.

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COURSE: ASCI515  
DATE: July 28, 2005  
WARNING:  
CENTER: Luke

**Update course description to include:**

1. Emerging simulation topics.
2. I think all basis were covered and nothing added or taken away. Excellent course!! Maybe change the blue book for a newer one!

**Added Learning Outcomes:**

**Change about ERAU experience:**

1. Military base location not always conducive to civilian students.
2. Have the online class instructors participate more instead of relying on the class to run it so much of the time.
3. Have more technological aids in class such as the on line course set-up Dr. Clark is currently using at Luke.
4. Take the MGMT dual major if I had the time. It is difficult to take online courses due to the overlap w/in class courses.
5. The lack of courses to complete my degree (masters) is making it a much longer task. I thought it would be quicker than this.

**Additional thoughts:**

1. Love the examples = practical learning, they are easy to remember, so I retain what I learned.
2. With an everchanging & fluid pace in technology I believe the course keeps up with what changes in the environment today!
3. I believe they are all thorough and well thought out.
4. The learning outcomes were useful and pertinent. It makes the learning experience unique and is valuable to me day to day duties.

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COURSE: ASCI 603  
DATE: July 27, 2005  
WARNING: Yes  
CENTER: Sky Harbor

**Update course description to include:**

1. Possibly update info regarding space so that info relating is more current/up to date.
2. It's a great class, but since changes happen daily it's great to discuss new things. Most of the text is somewhat behind due to daily changes.

3. More space discussion—or just split it off to be separate.

### **Added Learning Outcomes:**

#### **Change about ERAU experience:**

1. Make the Erau site easier to access the library information. Faster financial aid process.
2. Allow students to be actively involved in decisions relating to
  - course scheduling (student needs)
  - instructor selection (some just suck)

#### **Additional thoughts:**

1. The material in learning outcomes is adequately covered. Would only recommend updating info relating to space travel.
2. I enjoyed them.
3. I loved this class. Thank you Dr. \_\_\_\_\_

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COURSE: SFTY 375  
DATE: October 3, 2005  
WARNING: Yes  
CENTER: Luke

#### **Update course description to include:**

1. More time spent on engine accident investigation (faculty).
2. More real world interaction perhaps a field trip to an accident scene
3. Informative.
4. New technology.

### **Added Learning Outcomes:**

1. More investigative techniques instead of so much theory of operation.

#### **Change about ERAU experience:**

1. Limit the amount of research papers required in class.
2. Have better education/degree program guidance to help progress through all required classes.
3. Suggest better instruction and standardization of APA format. Different classes teach different use. Some like this course teach GRP format and other classes use the normal APA format.
4. No more ten page papers! If a ten page paper needs to be written then only one per class please. No more group assignments that count for points.
5. More frequent access to my progress in my degree plan (i.e. more frequent transcripts).
6. Have to think long and hard; and still not have a suitable answer.

7. Quit raising tuition!
8. Ensure all instructors use the same format/structure for their term papers.
9. Have less papers.

**Additional thoughts:**

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COURSE: ECON 210  
 DATE: October 5, 2005  
 WARNING: Yes  
 CENTER: Luke

**Update course description to include:**

**Added Learning Outcomes:**

1. Oil industry.

**Change about ERAU experience:**

1. ECON 210 should not be taught before 211; macroeconomics should come first. For students that do not have any economic background, microeconomics is extremely difficult. In order to bring this course/class along, the first part had to be devoted to bringing the students up to speed (faculty).
2. Allow more scheduled classes for individuals with abnormal working hours.

**Additional thoughts:**

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COURSE: CSCI 109  
 DATE: October 5, 2005  
 WARNING: Yes  
 CENTER: Luke

**Update course description to include:**

1. DOS, wiping computer clean.
2. Course is way too basic. Most everyone knows the basics of computers before this class started. If you're going to make this a requirement for a BS, it should go more in-depth to add value.

**Added Learning Outcomes:**

**Change about ERAU experience:**

1. Allow a larger variety of classes w/ different schedules for the individual w/ abnormal working hours.

2. Term papers are not consistent throughout instructors. Some want GRP, some want standard. Recommend briefing all instructors on standard APA format for undergraduate term papers.

**Additional thoughts:**

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COURSE: ASCI 605  
DATE: October 6, 2005  
WARNING: Yes  
CENTER: Luke

**Update course description to include:**

1. Incorporate a statement to indicate there will be a learning module on actually conducting the research.

**Added Learning Outcomes:**

1. Identification of appropriate material in each chapter (to avoid imbalance & unnecessary revisions).
2. Expand into other data collection methods.
3. Research and summarize "x" number of articles and present one in class.
4. Introduction to specific database search engines, both paid & free; more detailed explanation of search engine logic.

**Change about ERAU experience:**

1. Make sure on-line instructors are able to devote appropriate time to the Bb. Some disappear midway and expect the students to conduct the course w/o guidance from the instructor.
2. Prefer to be able to take more classes "in-class" vs. on-line.
3. Spend more time in class, but I'm not able to because of time constraints.
4. Not miss any classes.
5. Nothing, the MAS schedule of classes was flexible and allowed me to pursue this degree at my own pace.
6. Have more instructor variety at Luke Center.
7. Take this course early in the program. My advisor, Janice Dixon, specifically advised me not to. When I look at my previous papers I can see the benefit this class would have early on and help me to perfect my skills for the GCP.

**Additional thoughts:**

1. Should be required in the first three classes. My online profs did not enforce APA format and I wish I had learned it before I took those classes.
2. I learned for the 1<sup>st</sup> time what real research is about.
3. Having seen this course taught before, I believe this has been significantly more helpful in understanding the process of research.



4. I have been an on-line student for my 5 previous graduate courses. I believe I would have been better able to remain on track (time & learning wise) had I had insight on the class prior to day 1. Ex: - Have an idea for research topic prior to actual start date. – Understand the the objective is learning to accomplish a GCP, not become a “professional” writer.) My online courses never suggested getting ready for this course.)
5. You have to have several good ideas for your GCP – I didn’t, and have been catching up. Perhaps ER should have some way of giving advice on some topics before starting ASCI 605.

=====

COURSE: ASCI 604  
DATE: October 5, 2005  
WARNING: Yes  
CENTER: Sky Harbor

**Update course description to include:**

1. Newer technology.
2. Diet & exercise

**Added Learning Outcomes:**

**Change about ERAU experience:**

1. Make financial easier to deal with.
2. Erase the balance of my student loans.

**Additional thoughts:**

1. I enjoyed the course and enjoy human factors subject matter.
- =====

COURSE: MATH 112  
DATE: October 3, 2005  
WARNING: Yes  
CENTER: Sky Harbor

**Update course description to include:**

1. More practical applications and instruction to set up word problems.

**Added Learning Outcomes:**

**Change about ERAU experience:**

1. Have done it years ago. Would like to see more courses offered twice a week rather than once a week for 4-3/4 hrs. per session.

2. I should have channeled test for Macro Economics mid-term. The material on the test did not reflect the book because the test questions were subjective.
3. Plenty of work, lenient grading; it is difficult to come to class and work and get a perfect grade on everything. Effort counts.
4. Wider desks.

**Additional thoughts:**

=====

COURSE: MGMT 333  
 DATE: October 3, 2005  
 WARNING: Yes  
 CENTER: Sky Harbor

**Update course description to include:**

1. Every thing was covered well.
2. Not really about aviation.
3. Meets needs presently.

**Added Learning Outcomes:**

1. Grow socially & show others to grow.
2. Teach and learn from other students and faculty.
3. Complete degree requirements in 5 years.

**Change about ERAU experience:**

1. More online courses or teleconference/video conference that could be broadcast to employer conference rooms.
2. Drop my GPA from my overall GPA so that I may graduate from ERAU's courses with honors!!!
3. Add more selections in the pop machine.

**Additional thoughts:**

1. Great teacher, learned alot.

=====

COURSE: MGMT 314  
 DATE: October 4, 2005  
 WARNING: Yes  
 CENTER: Sky Harbor

**Update course description to include:**

1. Field trips.

**Added Learning Outcomes:**

**Change about ERAU experience:**

1. Incorporate even more aviation subjects.
2. Blackboard work.
3. Hope to be able to take more classes onsite rather than online.

**Additional thoughts:**

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COURSE: ASCI 612  
DATE: October 6, 2005  
WARNING: Yes  
CENTER: Sky Harbor

**Update course description to include:**

**Added Learning Outcomes:**

**Change about ERAU experience:**

1. The commute from homes.
2. Do more at home work.
3. Lower tuition costs!!
4. Not pay so much money!

**Additional thoughts:**

1. Keep up the good work.

=====

COURSE: ASCI 419  
DATE: October 6, 2005  
WARNING: Yes  
CENTER: Sky Harbor

**Update course description to include:**

1. More aircraft accident programs. Makes the class better than what it already is!

**Added Learning Outcomes:**

**Change about ERAU experience:**

1. Tak less online classes.
2. Fewer surveys.

**Additional thoughts:**

=====

COURSE: ASCI 515  
DATE: October 16, 2005  
WARNING: Yes  
CENTER: Spangdahlem/Ramstein

**Update course description to include:**

**Added Learning Outcomes:**

**Change about ERAU experience:**

1. More standardization on writing techniques and more (illegible) writing from all instructors.
2. Stop taking so many surveys.
3. Don't need as much time between the 2 class weekends.

**Additional thoughts:**

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COURSE: MGMT 322  
DATE: October 15, 2005  
WARNING: No  
CENTER: Kuwait

**Update course description to include:**

**Added Learning Outcomes:**

1. Course is very good.
2. (Illegible) a more current textbook.

**Change about ERAU experience:**

1. More assistance in technical writing.
2. Started earlier.
3. (Illegible) the curriculum and degree programs. Offer more courses at the center.

**Additional thoughts:**

1. Very excellent.
  2. An excellent class and one that I will remember.
- =====